Centers for Disease Control and Prevention (CDC)

SDLC Support for CDC Program Area Modules

Science Applications
International Corporation
An Employee Owned Company

Today's Topics

- ❖ **Introductions**
  - – **Science Applications International Corporation (SAIC)**
  - – **Scientific Technologies Corporation (STC)**
- ❖ **Program Area Module (PAM)**
- ❖ **Overall approach to PAMs**
- ❖ **PAM software development life cycle (SDLC)**
- ❖ **PAM status**
- ❖ **Communication challenges**
- ❖ **Points of contact**

Science Applications International Corporation

- ❖ **SAIC**
  - **World's largest employee-owned scientific and systems integration firm with $5.9 billion in annual revenues**
  - **Over 42,000 employees**
  - **#1 HHS Contractor (*Government Executive*, August 2002)**
    - **CDC, NIH, NCI, HRSA, SAMSA, FDA, and CMS**
  - **#1 Federal systems integrator (*Federal Computer Week*, September 2001)**
  - **Numerous Small Business Awards**
    - **Goldin-Stokes, Nunn-Perry, SBA**
  - **Recognized leader in structured software development**
    - **(over 43 Software Engineering Institute (SEI) ratings at Level 3, 4, or 5)**

Scientific Technologies Corporation

❖ **STC**

– **Strong state and local public health focus**

– **Premier provider of NEDSS assessments, strategic planning, GIS integration, and statewide immunization registry software**

– **Nationally recognized for contributions to public health solutions**

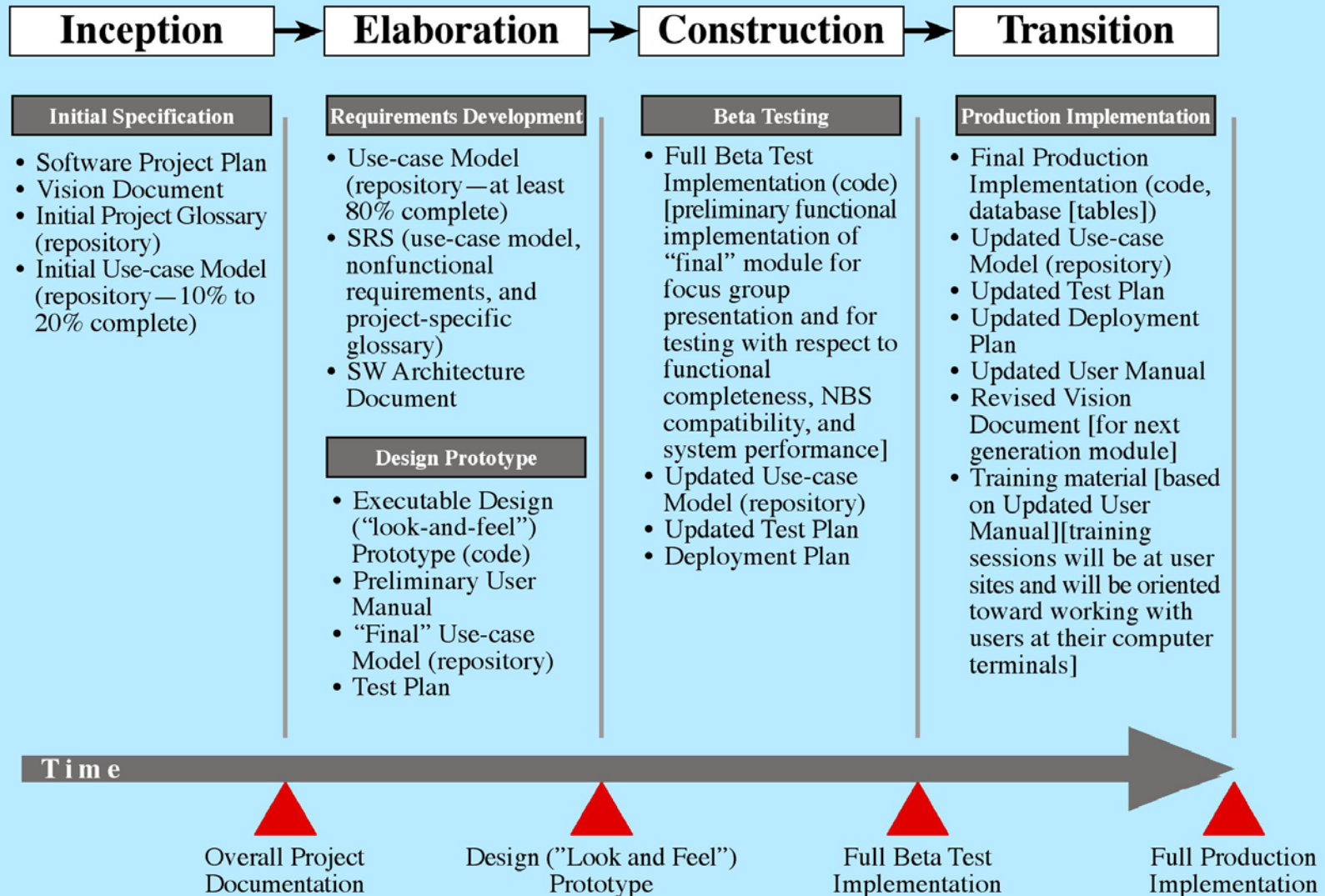– **Over 12 years of public health consulting practice**

Program Area Module (PAM)

❖ **Focuses on disease-specific data (e.g., STD contacts) and processes (e.g., STD contact tracing)**

❖ **Allows the sharing of common data (e.g., patient demographics) and processes (e.g., HL7 laboratory data import)**

❖ **Supports integration of data with other PAMs via a common PAM architecture that is under specification and development**

Benefits include: higher quality data, improved communication among programs, and reduced data entry.

Overall Approach to PAMs

- ❖ **Listening to**
  - – **Program offices**
  - – **Stakeholders**
  - – **Other vendors**
- ❖ **Building on NEDSS experience**
  - – **State-level readiness assessments/recommendation studies**
  - – **Over 800 state, local, private health personnel interviews**
  - – **Logical data model**
- ❖ **Using structured software development**
  - – **Reduces rework**
  - – **Increases speed of deployment**
  - – **Exploits set of standards-based processes tailored for PAM development**
  - – **Fosters quality product development at Enterprise Development Center (EDC) in Atlanta**

PAM Software Development Life Cycle

Inception →	Elaboration →	Construction →	Transition

Initial Specification

- Software Project Plan
- Vision Document
- Initial Project Glossary (repository)
- Initial Use-case Model (repository—10% to 20% complete)

Requirements Development

- Use-case Model (repository—at least 80% complete)
- SRS (use-case model, nonfunctional requirements, and project-specific glossary)
- SW Architecture Document

Design Prototype

- Executable Design ("look-and-feel") Prototype (code)
- Preliminary User Manual
- "Final" Use-case Model (repository)
- Test Plan

Beta Testing

- Full Beta Test Implementation (code) [preliminary functional implementation of "final" module for focus group presentation and for testing with respect to functional completeness, NBS compatibility, and system performance]
- Updated Use-case Model (repository)
- Updated Test Plan
- Deployment Plan

Production Implementation

- Final Production Implementation (code, database [tables])
- Updated Use-case Model (repository)
- Updated Test Plan
- Updated Deployment Plan
- Updated User Manual
- Revised Vision Document [for next generation module]
- Training material [based on Updated User Manual][training sessions will be at user sites and will be oriented toward working with users at their computer terminals]

Time →

▲ Overall Project Documentation

▲ Design ("Look and Feel") Prototype

▲ Full Beta Test Implementation

▲ Full Production Implementation

PAM Status

- ❖ **Lead**
  - **Inception phase—drafting documents and high-level business flows**
    - **vision, software project plan, project schedule**

- ❖ **TB Surveillance**
  - **Inception phase—delivered drafts and developing risk plan**
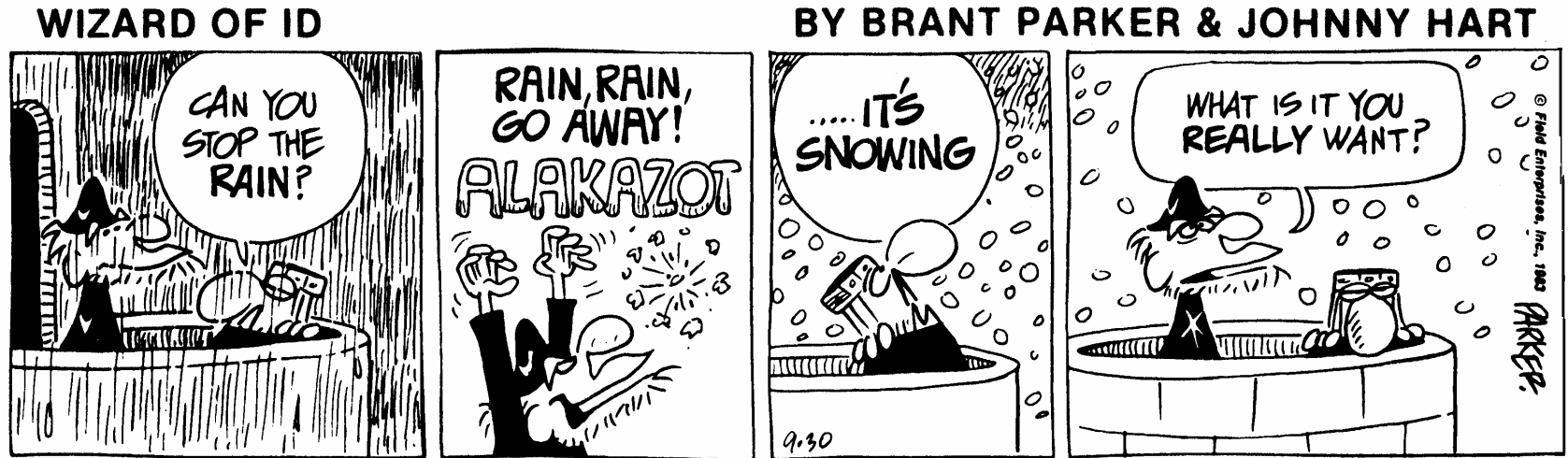   - **vision, software project plan, project schedule**

- ❖ **Food Borne Illness**
  - **Inception phase—held initial contact meetings**

- ❖ **Newborn Hearing**
  - **Inception phase—held initial contact meetings**

Communication Challenges

❖ **People refine their understanding of what needs to be done to build a system to satisfy requirements.**

❖ **Mutual refinement of understanding continues throughout the SDLC.**

❖ **It is easy to miscommunicate.**

Managing Communications

- ❖ **Unknown, but anticipated, change is integral to every systems development project.**
- ❖ **CCB provides a forum for systematically accounting for such changes.**
- ❖ **Project plan needs to incorporate CCB activities to account for responding to these changes.**
- ❖ **CCB benefits include delivered products that do what has been mutually agreed to.**

SAIC Points of Contact

SAIC

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